June 29, 2023

New York State Department of Environmental Conservation
Division of Materials Management
Bureau of Solid Waste Management
625 Broadway
Albany, NY 12233-7260
Via email to NYSSolidWastePlan@dec.ny.gov

***Re:* Comments on New York State Solid Waste Management Plan (2023 - 2032)**

On behalf of our thousands of supporters and members across New York State, the undersigned organizations submit these comments in response to the Draft New York State Solid Waste Management Plan (2023 – 2032) ("SSWMP").

We strongly support the overall waste reduction plan and the underlying goal of developing a circular economy based on waste prevention, reduction, reuse, recycling, manufacturer responsibility, and the reduction of toxic materials in production. We also appreciate the critical importance of this plan to achieve the State's climate goals established under the Climate Leadership and Community Protection Act ("CLCPA").

Focusing on the connections between waste management and the food system, we offer three specific recommendations for the SSWMP: (1) halting the spread of biosolids on farmland, (2) limiting investments for anaerobic digesters at industrial animal operations, and (3) expanding efforts to reduce food waste.

1. DEC should impose a moratorium on the spreading of biosolids on farmland.

In the SSWMP, DEC promotes the recycling of sewage sludge, also known as biosolids, by applying it on agricultural and other lands. Land application of clean biosolids reduces waste in landfills and provides nutrients and organic matter to soils. However, given the high risk that biosolids from New York (or other) wastewater treatment plants are contaminated with persistent toxic chemicals, DEC should not expand, and in fact should cease, spreading biosolids on farmland until we know it can be done safely.

Studies show that biosolids contain a significant amount of harmful pollutants, including heavy metals and per- and polyflorinated alkyl substances (PFAS).[1] PFAS are a class of

[1] *See* Sierra Club Atlantic Chapter, *Sewage Sludge 'Fertilizer' Contaminates Farms With Toxic PFAS – 'Forever Chemicals' Endanger Human Health, the Environment and the Future of Our Food* (June 2023), https://atlantic2.sierraclub.org/sites/newyork.sierraclub.org/files/documents/2023/06/PFAS%20Paper%20Final%20June%201.pdf (describing findings that DEC detected alarming levels of PFAS in sewage sludge when it tested eight sewage treatment plants in 2017); EPA Office of Inspector General, *Report: EPA Unable to Assess the Impact of Hundreds of Unregulated Pollutants in Land-Applied Biosolids on*

chemicals associated with a variety of health problems, including cancers, endocrine system disruption, impaired immune function, and fertility and reproductive issues.[2] PFAS are also harmful to soil health and the microbiome, interfering with the natural processes needed to tackle climate change and produce healthy food.[3] Spreading contaminated biosolids on farmland results in highly elevated concentrations of PFAS in the soil and the groundwater,[4] which is then taken up by the food produced on that land.[5] PFAS chemicals are highly persistent in soil and water and are commonly called "forever chemicals" because the strength of their chemical bonds is hard to break. There are no currently available methods to remove PFAS contamination from soil.

According to the SSWMP, DEC is working to limit the environmental exposure of these chemicals, and EPA is completing a comprehensive risk assessment to determine an environmentally protective limit for biosolids recycling. Also, DEC is providing funding to SUNY ESF to determine the concentration of PFAS in recycled biosolids in New York State and to identify any industrial sources so they can be addressed. This heightened concern and monitoring is an important first step.

However, the current risk from pollutants contaminating biosolids remains too high. The continued use of contaminated biosolids threatens the future of our farmland and compromises the safety of crops, the safety of our drinking water, and the health of farmers, gardeners, and consumers who eat the products grown on contaminated land. Consequently, we call upon DEC to ban the spreading of biosolids on farmland and other areas until the measures in the plan to reduce toxic residues are fully implemented and in effect and landowners, food consumers, and the public can be assured it is safe.

Human Health and the Environment, (Nov. 15, 2018) https://www.epa.gov/office-inspector-general/report-epa-unable-assess-impact-hundreds-unregulated-pollutants-land.

[2] National Academies of Sciences, Engineering, and Medicine, *Guidance on PFAS Exposure, Testing, and Clinical Follow-Up* (Washington, DC: The National Academies Press 2022), https://nap.nationalacademies.org/read/26156/chapter/5#58.

[3] PFAS in soil decreases bacterial diversity depending on the types of PFAS and their concentration. Qiao, Weichuan, et al., *Perfluoroalkyl substances (PFASs) influence the structure and function of soil bacterial community: greenhouse experiment*, Science of the Total Environment 642 (2018): 1118-1126. PFAS have been implicated in harming earthworms and plants. Its presence in soil increased soil litter decomposition. PFAS in soil inhibits soil respiration and hampers water-stable aggregates – a hallmark of soil health that prevent soil from dissolving into dust and being subject to erosion. In addition PFAS altered soil bacterial and fungal communities. Xu, Baile, et al., *Effects of perfluoroalkyl and polyfluoroalkyl substances (PFAS) on soil structure and function*, Soil Ecology Letters (2022): 1-10, https://link.springer.com/content/pdf/10.1007/s42832-022-0143-5.pdf.

[4] Gwynn R. Johnson, *PFAS in soil and groundwater following historical land application of biosolids*, https://www.sciencedirect.com/science/article/abs/pii/S004313542101229X.

[5] Blaine AC, Rich CD, Hundal LS, Lau C, Mills MA, Harris KM, et al., *Uptake of perfluoroalkyl acids into edible crops via land applied biosolids: Field and greenhouse studies*, Environ Sci Technol. 2013;47(24):14062–14069. doi: 10.1021/es403094q; Rosella Ghisi, Teofilo Vamerali, Sergio Manzetti, *Accumulation of perfluorinated alkyl substances (PFAS) in agricultural plants: A review*, https://www.sciencedirect.com/science/article/abs/pii/S0013935118305577.

2. DEC should not fund anaerobic digesters at large industrial animal operations.

The SSWMP calls for the promotion of anaerobic digestion capacity on farms. Proponents argue that these systems reduce greenhouse gas emissions by capturing methane that would otherwise be emitted to displace the use of fossil fuels. However, biogas is not as sustainable as its proponents contend for several reasons.

- First, the burning of biogas emits other greenhouse gases as well as other air contaminants that are harmful locally.[6]
- Second, the infrastructure for manure-to-energy projects has been shown to leak large amounts of methane, reducing any net benefit significantly.[7]
- Third, providing taxpayer-subsidized grants for landowners to profit from selling methane perversely creates incentives for producers to generate more livestock manure rather than using inherently cleaner approaches to manure management that would generate less pollution.[8] Combined with system leakage and non-captured emissions the net result may be an increase in overall greenhouse gas emissions.[9]
- Fourth, anaerobic digesters do not capture greenhouse gas emissions from the animals themselves (enteric emissions are much larger than manure methane emissions)[10] or from greenhouse gas emissions from animal feed production so subsidizing digesters can again perversely incentivize herd growth and thus greater emissions.
- Fifth, using public funds to subsidize manure digesters is a wasteful use of taxpayer money since there are far more cost-effective ways to reduce manure methane,[11] and

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[6] Phoebe Gittelson et al., *The False Promises of Biogas: Why Biogas Is an Environmental Justice Issue,* ENVTL. JUST. (2021), https://www.liebertpub.com/doi/pdf/10.1089/env.2021.0025.

[7] Flesch, Thomas K. et al. "Fugitive methane emission from an agricultural biodigester." Biomass and Bioenergy. 2011 at 3927; Sandars, D. L. "Environmental benefits of livestock manure management practices and technology by life cycle assessment." Biosystems Engineering. 2003. Vol. 84, Iss. 3 at 267.

[8] Ruthie Lazenby, *Rethinking Manure Biogas – Policy Considerations to Promote Equity and Protect the Climate and Environment*, https://www.vermontlaw.edu/sites/default/files/2022-08/Rethinking_Manure_Biogas.pdf (describing the financial incentives to produce and capture more manure emissions rather than reducing livestock emissions).

[9] Grubert, Emily, *At Scale, Renewable Natural Gas Systems Could Be Climate Intensive: the Influence of Methane Feedstock and Leakage Rates*, Environmental Research Letters (August 11, 2020), https://iopscience.iop.org/article/10.1088/1748-9326/ab9335.

[10] EPA calculates that enteric fermentation represents 28% of total agriculture methane emissions, while manure management represents 8%. EPA, *Overview of Greenhouse Gases*, https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane.

[11] Cover and flare systems are significantly cheaper. *See* Jenifer L. Wightman & Peter B. Woodbury, *New York Dairy Manure Management Greenhouse Gas Emissions and Mitigation Costs (1992 – 2022)*, 45 J. Environ. Qual. 266 (2016), https://pubmed.ncbi.nlm.nih.gov/26828182/. Also, there are far less expensive sources of whatever methane is needed as a fuel. *See* NRDC, *A Pipe Dream or Climate Solution? The Opportunities and Limits of Biogas and Synthetic Gas to Replace Fossil Gas* (June 2020), https://www.nrdc.org/sites/default/files/pipe-dream-climate-solution-bio-synthetic-gas-ib.pdf.

DEC has the legal regulatory authority to require the largest methane generators to reduce these emissions[12] just as other sectors must reduce their methane emissions.

- Sixth, subsidized development of methane digesters contributes to the development of a gas transportation system (such as pipelines) that both diverts from and prolongs the necessary transition off fossil fuels.
- And finally, since manure digesters only make economic sense at the largest facilities, [13] the landowners who are already the largest will receive the bulk of this funding, further exacerbating inequality, pre-existing inequities, and consolidation of farming into ever larger entities.

Consequently, we call upon DEC to stop public subsidies for anaerobic digesters on large animal operations.

3. DEC should expand efforts to reduce food waste.

Finally, the SSWMP contains many good ideas about educating the public about reducing food waste and composting. We appreciate and support these efforts to increase food scrap recycling and composting, including the expansion of the existing Food Donation and Food Scraps Recycling law to include smaller food scrap generators and appropriately expand definition of covered food scrap generators reflecting recycling capacity in the state. We urge the incorporation of these efforts into the Climate Smart Communities Program, which provides additional funding, reaches a different audience, and currently does not pay enough attention to food.

Furthermore, given the sad reality that we waste over 30% of the food we produce, with enormous implications for water, air, and climate pollution and misuse of scarce resources, we urge especially close attention to reducing food waste at its source. This should include providing more opportunities for landowners to make profitable use of their land in ways that advance CLCPA success rather than conflict with it. This should include development of programs to encourage, incentivize, and subsidize land-based carbon sequestration on farm, forest, and less managed land. These measures could include additional funding for long-term climate-focused agricultural and wetland conservation easements and riparian buffers, reform of the real property tax law Section 480a to provide equal tax incentive for carbon sequestration as for wood harvesting, acceleration of renewable energy siting, and expansion of other opportunities for landowners to switch to other climate-friendly land uses.

Thank you for your consideration of these comments.

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[12] Peter H. Lehner & Nathan A. Rosenberg, *Advancing Climate-Neutral Agriculture in New York*, 33 Env. Law in New York 79 (May 2022).

[13] To be financially viable, biogas recovery systems typically require manure from at least 2,000 hogs or at least 500 cows. U.S. Env't Protection Agency, Ag Star, *Is Anaerobic Digestion Right for Your Farm*, https://www.epa.gov/agstar/ anaerobic-digestion-right-your-farm#q2.